

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2004-0015

ADOPTION OF FINAL SITE CLEANUP REQUIREMENTS AND RESCISSION OF ORDER
NOS. 98-018 AND 99-015 FOR:

PUREX INDUSTRIES, INC.;
BARON-BLAKESLEE, INC., A DELAWARE CORPORATION;
HONEYWELL INTERNATIONAL, INC.; AND
W. HOWARD AND CATHERINE JONES

for the property located at

511 O'NEILL AVENUE
BELMONT
SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Board), finds that:

1. **Site Location:** The Site is located at 511 O'Neill Avenue in Belmont, San Mateo County. It is bounded by Ralston Avenue to the north, Harbor Boulevard to the south, Industrial Way to the east and El Camino Real to the west [Figure 1, Site Location Map]. The land use in the vicinity area includes residential housing to the west, and commercial and light industrial developments to the north, east and south.

The Site has been divided into two areas, the Source Area and the Offsite Area [Figure 2].

- a. **Source Area.** The Source Area is defined as the area west of the 260-498 Harbor Boulevard western property boundary.
 - b. **Offsite Area.** The Offsite Area is defined as the area east of the 260-498 Harbor Boulevard western property boundary.
2. **Site History:** Currier Company opened a business at the 511 O'Neill Avenue property in 1960. Baron-Blakeslee, Inc., a California Corporation, purchased the Currier Company and operated a solvent sales and recycling operation at the site. On June 30, 1970, Baron-Blakeslee, Inc., merged with Purex Corporation and became a division of Purex Corporation. Purex Corporation, through its Baron-Blakeslee Division, continued to operate the solvent recycling facility until 1972, when the facility was closed.

In 1978, Purex Industries, Inc., was incorporated in Delaware and acquired all of the stock of Purex Corporation. In 1982, the assets and liabilities for the Baron-Blakeslee Division (of Purex Corporation) were transferred to Baron-Blakeslee, Inc., a Delaware Corporation (Baron-Blakeslee/Del). Baron-Blakeslee/Del then executed an agreement assuming all liabilities relating to the former Baron-Blakeslee Division. Purex Industries, Inc., which is still in business, became the parent company of both Baron-Blakeslee/Del and Purex Corporation. Three years later, in 1985, Purex Industries, Inc., sold Baron-Blakeslee/Del to Allied Corporation, which later became AlliedSignal, Inc., and subsequently became Honeywell International, Inc.

The Site has been owned since 1978 by W. Howard and Catherine Jones, who operate a small wholesale battery business at that location.

In the late 1980s, volatile organic compounds (VOCs) were detected in groundwater beneath an adjacent site located at 500 Harbor Boulevard in Belmont. In 1990, groundwater samples collected near the adjoining property line contained elevated concentrations of VOCs. There were no known sources of VOCs at the 500 Harbor Boulevard site. Consequently, the 511 O'Neill Avenue site was a suspected VOC source due to its former solvent recycling business.

In March 1996, Purex Industries, Inc., conducted a preliminary soil and groundwater investigation at the site. Investigation results revealed VOCs in soil and elevated VOC concentrations in groundwater underneath the 511 O'Neill Avenue site.

3. **Named Dischargers:** Purex Industries, Inc. is named as a discharger because it is a successor of Purex Corporation, which operated a solvent recycling facility at the site. Purex Corporation released solvents that entered the soil and groundwater at the site. Baron-Blakeslee/Del is named as a discharger because it assumed some of the liability of Purex Corporation related to the site. Honeywell International, Inc. is named as a discharger because it is a successor to AlliedSignal, Inc., which purchased Baron-Blakeslee/Del.

W. Howard and Catherine Jones (the Jones') are named as dischargers because they are the current property owners, and have knowledge of the discharges of solvent and the ability to control those discharges. The Jones' did not actively discharge solvents at the site, or operate a business that discharged solvents, and the site is being remediated by other responsible parties. The Jones' are required to comply with this Order only if the Board or Executive Officer find that the other named responsible parties fail to comply with the terms of the Order.

If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the state, the Board will consider adding that party's name to this Order.

4. **Regulatory Status:** This Site was subject to the following Board orders:
- Site Cleanup Requirements (Order No. 98-018) adopted March 18, 1998.
 - Amended Site Cleanup Requirements (Order No. 99-015) adopted April 21, 1999.
5. **Site Hydrogeology:** Site soils consist of unconsolidated alluvial sediments, primarily clays and silts, with interbedded sands and gravels underlain by bedrock. Bedrock in the area consists of greenstone, greywacke, conglomerate, and chert and forms an east-west trending linear channel that dips eastward toward San Francisco Bay. The groundwater flow direction is east-northeast, toward Belmont Creek and the Redwood Shores Lagoon.
- a. **Source Area.** Groundwater occurs approximately 10 to 12 feet below ground surface (bgs) in alluvial sediments. Depth to bedrock is approximately 20 feet bgs.
 - b. **Offsite Area.** Groundwater occurs approximately 2 to 4 feet bgs throughout most of the Offsite Area. Depth to bedrock increases to as much as 80 feet bgs. Groundwater flow is influenced by the bedrock channel, tidal action in Belmont Creek, and a saltwater interface between Industrial Way and Belmont Creek. Due to saltwater intrusion and proximity to San Francisco Bay, most groundwater in the Offsite Area is saline or brackish.
6. **Remedial Investigation:** The primary chemicals of concern at the Site are trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride. The groundwater plume migrates eastward from the Source Area. The TCE plume is approximately 2,400 feet long and 1000 feet wide, and encompasses the smaller cis-1,2-DCE plume. Vinyl chloride is found sporadically throughout the plume.
- a. **Source Area.** Within the Source Area, VOCs are found predominantly in the saturated zone, with TCE concentrations in soil as high as 81 mg/kg. The groundwater plume, with TCE concentrations exceeding 740,000 µg/L in samples collected during the second quarter of 2003, follows the shape and orientation of the bedrock contours. The high concentrations of TCE in groundwater suggest that there may be dense nonaqueous phase liquid (DNAPL) present in the soils.
- Most unsaturated soil samples contain only trace levels of VOCs, indicating that the high levels of VOCs in saturated soils likely resulted from downward migration of solvents through preferential pathways in the coarser grained sediments.
- b. **Offsite Area.** Groundwater samples collected at various depths indicate the contamination is confined to the upper 40 feet of the shallow groundwater zone. In the second quarter of 2003, maximum concentrations in groundwater were 17,000 µg/L TCE and 5,100 µg/L cis-1,2-DCE. The distribution of the plume

appears to be limited by the bedrock channel and Belmont Creek. The plume has not migrated beyond Belmont Creek.

Surface water samples collected in Belmont Creek during the second quarter of 2003 contained TCE and cis-1,2-DCE at 54 and 22 µg/L, respectively. Both of these concentrations are below the chronic aquatic toxicity values, as referenced in the Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (San Francisco Bay RWQCB, July 2003).

Offsite soils did not contain elevated levels of VOCs. Soil vapor samples contained TCE, cis-1,2-DCE and vinyl chloride, but these chemicals were not detected in indoor air samples collected in buildings located near the soil vapor sampling points.

7. **Adjacent Sites:** Several sites with confirmed soil and groundwater contamination have been identified within one-quarter mile radius of this site. Contaminants at these sites include petroleum hydrocarbons and chlorinated solvents. The petroleum hydrocarbons are most likely attributed to the individual sites. The source(s) of VOCs to groundwater has not been fully identified. However, the 511 O'Neill Avenue site is the most likely source for the VOCs detected in groundwater due to its past solvent recycling operations and the presence of high VOC concentrations in groundwater underneath the site. The extent of groundwater contamination has not been defined for most of these sites. These sites include:

500 Harbor Boulevard - This property is located southeast and adjacent to the 511 O'Neill Avenue site. During an underground storage tank closure on the property, petroleum hydrocarbons and several VOCs at exceptionally high concentrations were detected. Current VOC concentrations in groundwater are as high as 380,000 µg/L TCE and 13,000 µg/L cis-1,2-DCE. The petroleum hydrocarbons were attributed to the leaking underground fuel storage tanks located at the 500 Harbor Blvd. site. However, there was no known source on the 500 Harbor site for the detected chlorinated solvents. Based on the analytical data, the solvents most likely come from an off-site source.

1309 Elmer Street - This property is cross-gradient to the 511 O'Neill site. Investigations at this property have shown the presence of elevated TCE concentrations (up to 9,800 ppb in 1996) in groundwater underneath the 1309 Elmer Street property. The extent of chlorinated VOCs was not determined; however, these VOCs may have originated from an off-site source(s).

1400 Elmer Street - This property is cross-gradient to the 511 O'Neill site. An investigation of this property showed the presence of TCE (up to 450 ppb in 1986) in groundwater underneath the 1400 Elmer Street property. The extent of the chlorinated VOCs is not determined; however, these VOCs may have originated from an off-site source(s).

1515 Industrial Way - Chlorinated VOCs were detected at elevated concentrations in groundwater underneath the northern portion of the site; however, these VOCs were most likely from an off-site source(s).

8. **Interim Remedial Measures:** An aquifer pump test was performed in October 1999 to determine the pumping rate necessary to capture the VOC plume in the Source Area. Seven DNAPL product recovery wells were installed in the Source Area, and have been operated intermittently during chemical oxidation in the source area. Extracted groundwater is stored in 55-gallon drums and transported to a licensed hazardous waste facility. Groundwater has been monitored since 1999 and has been monitored quarterly since the third quarter of 2000.

9. **Environmental Risk Assessments**

- a. **Screening Levels:** A screening level environmental risk assessment was carried out to evaluate potential environmental concerns related to identified soil and groundwater impacts. Chemicals evaluated in the risk assessment include TCE, cis-1,2-DCE and vinyl chloride, the primary chemicals of concern identified at the site.

As part of the assessment, site data were compared to Environmental Screening Levels (ESLs) compiled by Board staff (July 2003). The presence of chemicals at concentrations above the ESLs indicates that additional evaluation of potential threats to human health and the environment is warranted. Screening levels for groundwater address the following environmental concerns: 1) drinking water impacts (toxicity and taste and odor), 2) impacts to indoor air and 3) migration and impacts to aquatic habitats. Screening levels for soil address: 1) direct exposure, 2) impacts to indoor air, 3) leaching to groundwater and 4) nuisance issues. Screening levels for drinking water are based on the lowest of toxicity-based standards (e.g., promulgated Primary Maximum Contaminant Levels (MCLs) or equivalent) and standards based on taste and odor concerns (e.g., Secondary MCLs or equivalent). Chemical-specific screening levels for other human health concerns (i.e., indoor-air and direct-exposure) are based on a target excess cancer risk of 1×10^{-6} for carcinogens and a target Hazard Quotient of 0.2 for noncarcinogens. Groundwater screening levels for the protection of aquatic habitats are based on promulgated surface water standards (or equivalent). Soil screening levels for potential leaching concerns are intended to prevent impacts to groundwater above target groundwater goals (e.g., drinking water standards). Soil screening levels for nuisance concerns are intended to address potential odor and other aesthetic issues.

- b. **Groundwater Assessment:** The high concentrations of VOCs in groundwater exceeded the screening levels for potential drinking water and potential indoor air concerns in both the Source and Offsite Areas. Groundwater concentrations also exceeded potential aquatic habitat concerns in the Offsite Area. An ecological

assessment determined that no receptors are currently exposed to site-related VOCs at concentrations that would cause adverse effects.

Chemicals of Concern	Maximum Reported Concentration (µg/L)	Results of Screening Assessment *		
		Potential Drinking Water Concerns	Potential Indoor-Air Concerns	Potential Aquatic Habitat Concerns
Source Area:				
TCE	740,000	X	X	
cis-1,2 DCE	47,000	X	X	
Vinyl Chloride	510	X	X	
Offsite Area:				
TCE	13,000	X	X	X
cis-1,2 DCE	5,100	X	X	X
Vinyl Chloride	44	X	X	X

* Note: an "X" indicates that respective Environmental Screening Level was exceeded

The Board considers the following risks to be acceptable at remediation sites: a cumulative hazard index of 1.0 or less for non-carcinogens, and for carcinogens a cumulative excess cancer risk of 1×10^{-6} or less (residential scenario) or 1×10^{-5} or less (commercial/industrial scenario).

Based on current industrial/commercial land use, there are potential risks to human health in both the Source and Offsite Areas via the drinking water and indoor air pathways, and to Belmont Creek in the Offsite Area due to the migration of VOC-impacted groundwater. Therefore, remediation is warranted at this Site. Due to risks that will be present at the site pending further remediation, institutional constraints are appropriate to limit on-site exposure to acceptable levels. Institutional constraints include a deed restriction that notifies future owners of sub-surface contamination, prohibits the use of shallow groundwater beneath the site as a source of drinking water until cleanup standards are met, and prohibits sensitive uses of the site such as residences or day-care centers.

10. **Feasibility Study:** Separate feasibility studies were performed for the Source Area and the Offsite Area. Several remedial technologies were screened for technical effectiveness, implementability and cost prior to selection of the final remedial actions:

- ♦ Monitored Natural Attenuation
- ♦ Slurry Walls
- ♦ Permeable Reactive Barrier
- ♦ Enhanced Bioremediation
- ♦ Surfactant Flushing
- ♦ In Situ Chemical Oxidation
- ♦ In-well Air Stripping
- ♦ Air Sparging
- ♦ Soil Vapor Extraction
- ♦ Steam Injection
- ♦ Six Phase Soil Heating
- ♦ Product Recovery Wells
- ♦ Dual Phase Extraction
- ♦ Groundwater Extraction and Treatment
- ♦ Soil Excavation and Treatment

11. **Remedial Action Plan:**

- a. **Source Area:** A combination of product recovery wells, In Situ Chemical Oxidation (ISCO), and groundwater extraction and treatment is being performed in the Source Area to treat both soil and groundwater. Recovery wells pump relatively mobile DNAPL to the surface, where it is collected and disposed. Any residual non-mobile DNAPL adsorbed into the soil matrix will be destroyed using ISCO. An oxidant, specifically Fenton's reagent, is injected into the ground to react with the VOCs and produce carbon dioxide, chloride and water. Hydraulic containment wells placed downgradient of the injection area pump at a rate sufficient to contain the groundwater from the Source Area during injection. The extracted groundwater is stored in drums and disposed offsite. The groundwater will be treated to bring VOC concentrations down to the level consistent with the initial action level for offsite areas in order to reduce the potential for vapor intrusion into indoor air. Following completion of the ISCO treatment, confirmation soil samples will be taken to determine if any additional remedial actions are necessary. Groundwater will be monitored quarterly for the first year and semi-annually thereafter to detect any rebound in VOC concentrations.

Provided appropriate access permission will be obtained from property owners, indoor air will be monitored semi-annually for the first year and annually thereafter to prevent potential human health exposure risks.

- b. **Offsite Area:** The dischargers propose to use Enhanced In-situ Bioremediation (EISB) and Monitored Natural Attenuation (MNA) for remediation in the Offsite Area. EISB treatment pilot testing will be conducted in two focus areas, at the Source Area and at the embankment along the affected portion of Belmont Creek. A 100-foot buffer zone has been established along Belmont Creek. This buffer zone will be treated to bring groundwater concentrations down to meet the chronic aquatic habitat goals for TCE and cis-1,2-DCE (360 µg/L and 590 µg/L, respectively) in order to protect ecological receptors in the creek and the benthic

zone. If the pilot testing results are favorable, the EISB treatment will then be expanded to cover the core of the plume (concentrations of TCE in groundwater >2000 µg/L) and bring TCE concentrations down to an initial action level of 2000 µg/L in order to reduce the potential threat to indoor air. Following treatment, groundwater and surface water will be monitored semiannually as part of the MNA. Additional treatment will be applied if groundwater concentrations exceed the cleanup goals in either the plume area or in the buffer zone. If the pilot test results are not favorable, the dischargers are required to propose, and implement upon approval, modified and/or alternative remedies that will meet the remedial action objectives.

A soil vapor monitoring network will be established, and one round of soil vapor and indoor air samples will be collected to determine baseline concentrations. Site-specific vapor action levels will be developed from the baseline values. Soil gas samples will be collected semiannually. If soil gas concentrations exceed the action levels, direct indoor air sampling will be performed in buildings near those sampling points and additional remediation, if necessary, will be performed.

The dischargers propose the implementation of land use restrictions and institutional controls until the groundwater quality has been restored. Land use restrictions may include ensuring that landowners are not permitted to install private water supply wells. Institutional controls may include deed restrictions and notifications to property owners in the Offsite Area, as well as working with the City of Belmont to restrict the properties within the Site boundary to commercial or industrial uses.

12. **Basis for Cleanup Standards**

- a. **General:** State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. The previously-cited remedial action plan confirms the Board's initial conclusion that background levels of water quality cannot be restored. This order and its requirements are consistent with Resolution No. 68-16.

State Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

- b. **Beneficial Uses:** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in Title 23, California Code of Regulations, Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high Total Dissolved Solids (TDS), low yield, or naturally-high contaminant levels.

The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the site:

- a. Municipal and domestic water supply
- b. Industrial process water supply
- c. Industrial service water supply
- d. Agricultural water supply
- e. Freshwater replenishment to surface waters

At present, there is no known use of groundwater underlying the site for the above purposes. Most groundwater in the Offsite Area has high TDS, and therefore would not qualify as a potential source of drinking water based on the TDS criterion of Board Resolution No. 89-39. However, groundwater in the Source Area and a small portion of the Offsite Area north of Harbor Boulevard could be a potential drinking water source. As a result, the Offsite Area has been further divided into Area 1 (potential drinking water source) and Area 2 (not a potential drinking water source) [Figure 2].

The shallow groundwater from the site vicinity recharges Belmont Creek. The Creek is located less than ¼ mile southeast of the subject site. The existing and potential beneficial uses of Belmont Creek include:

- a. Groundwater recharge
- b. Water contact and non-contact recreation
- c. Wildlife habitat
- d. Cold freshwater and warm freshwater habitat
- e. Estuarine habitat

- c. **Basis for Groundwater Cleanup Standards:** The groundwater cleanup standards for Offsite Area 2 are based on applicable water quality objectives and are lowest of the screening levels for potential indoor air impacts or aquatic habitat protection. The groundwater cleanup standards for the Source Zone and Offsite Area 1 are the more stringent of US EPA and California primary maximum contaminant levels (MCLs), or equivalent. Cleanup to these levels will result in acceptable residual risk to human health and aquatic habitats.
 - d. **Basis for Soil Cleanup Standards:** The soil cleanup standards for the Source Area are shown in section B.3 below, and are the lowest of the screening levels for human direct exposure concerns, potential indoor air impacts, or potential leaching of contaminants to groundwater. Cleanup to these levels will result in acceptable residual risk to humans or the environment.
- 13. **Future Changes to Cleanup Standards:** The goal of this remedial action is to restore the beneficial uses of groundwater underlying and adjacent to the site. Results from other sites suggest that full restoration of beneficial uses to groundwater as a result of active remediation at this site may not be possible. If full restoration of beneficial uses is not technologically nor economically achievable within a reasonable period of time, then the dischargers may request modification to the cleanup standards or establishment of a containment zone, a limited groundwater pollution zone where water quality objectives are exceeded. Conversely, if new technical information indicates that cleanup standards can be surpassed, the Board may decide that further cleanup actions should be taken.
 - 14. **Basis for 13304 Order:** California Water Code Section 13304 authorizes the Board to issue orders requiring dischargers to cleanup and abate waste where the dischargers have caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.
 - 15. **Cost Recovery:** Pursuant to California Water Code Section 13304, the dischargers are hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.
 - 16. **CEQA:** This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

17. **Notification:** The Board has notified the dischargers and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.
18. **Public Hearing:** The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the dischargers (or their agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.
2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. REMEDIAL ACTION PLAN AND CLEANUP STANDARDS

1. **Implement Remedial Action Plan:** The dischargers shall implement the remedial action plans described in finding 11.

2. **Groundwater Cleanup Standards:** The following groundwater cleanup standards shall be met in all wells identified in the Self-Monitoring Program:

Constituent	Cleanup Standard (µg/L)	Basis
Source Area and Offsite Area, Area 1:		
TCE	5	California DHS Primary MCL
cis-1,2-DCE	6	California DHS Primary MCL
Vinyl Chloride	0.5	California DHS Primary MCL
Offsite Area, Area 2:		
TCE	360	Chronic Aquatic Toxicity
cis-1,2-DCE	590	Chronic Aquatic Toxicity
Vinyl Chloride	13	Risk-based – Vapor Intrusion

The cleanup standards noted above are referenced in the Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (San Francisco Bay RWQCB, July 2003).

3. **Soil Cleanup Standards:** The following soil cleanup standards shall be met for the soils in the Source Area. Risks associated with VOCs leaching from soil into groundwater will be re-evaluated based on results of confirmation soil samples collected following completion of the Source Area treatment.

Constituent	Standard (mg/kg)	Basis
TCE	7.3	Risk-based – Vapor Intrusion
cis-1,2-DCE	18	Groundwater Protection – Soil Leaching
Vinyl Chloride	0.54	Risk-based – Direct Exposure

The cleanup standards noted above are referenced in the Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (San Francisco Bay RWQCB, July 2003). Adjusted to a target 1×10^{-5} cancer risk.

C. TASKS

1. SOURCE AREA REMEDIAL ACTIONS

COMPLIANCE DATE: August 1, 2004

Submit a report acceptable to the Executive Officer to evaluate the success of the ISCO treatments in meeting the Source Area groundwater and soil cleanup standards contained in this Order, and propose further remedial measures, if warranted, to ensure that the cleanup standards in this order are attained. Any complimentary workplan shall describe all additional implementation steps and provide an implementation time schedule.

2. OFFSITE AREA REMEDIAL ACTIONS

COMPLIANCE DATE: July 1, 2004

Submit a workplan acceptable to the Executive Officer describing all significant implementation steps of the EISB and including an implementation time schedule.

3. PROPOSED INSTITUTIONAL CONSTRAINTS

COMPLIANCE DATE: July 1, 2004

Submit a technical report acceptable to the Executive Officer documenting procedures to be used by the dischargers, and future owners and associated occupants of the site, to prevent or minimize human exposure to soil and groundwater contamination prior to meeting cleanup standards. Such procedures shall include a deed restriction for the Source Area prohibiting the use of shallow groundwater as a source of drinking water and prohibiting residential uses until groundwater quality has been restored, and address the issues raised in Finding 11.b. for the Offsite Area.

4. IMPLEMENTATION OF INSTITUTIONAL CONSTRAINTS

COMPLIANCE DATE: 90 days after Executive Officer approval

Submit a technical report acceptable to the Executive Officer documenting that the proposed institutional constraints have been implemented.

5. **FIVE-YEAR STATUS REPORT**

COMPLIANCE DATE: September 1, 2009, and
every 5 years thereafter

Submit a technical report acceptable to the Executive Officer evaluating the effectiveness of the approved remedial action plan. The report should include:

- a. Summary of effectiveness in controlling contaminant migration and protecting human health and the environment;
- b. Comparison of contaminant concentration trends with cleanup standards;
- c. Comparison of anticipated versus actual costs of cleanup activities;
- d. Performance data (e.g. groundwater volume extracted, chemical mass removed, mass removed per million gallons extracted);
- e. Cost effectiveness data (e.g. cost per pound of contaminant removed);
- f. Summary of additional investigations (including results) and significant modifications to remediation systems;
- g. Additional remedial actions proposed to meet cleanup standards (if applicable) including time schedule.

If cleanup standards have not been met and are not projected to be met within a reasonable time, the report should assess the technical practicability of meeting cleanup standards and may propose an alternative cleanup strategy.

6. **PROPOSED CURTAILMENT**

COMPLIANCE DATE: 60 days prior to proposed curtailment

Submit a technical report acceptable to the Executive Officer containing a proposal to curtail remediation. Curtailment includes system closure (e.g. well abandonment), system suspension (e.g. cease extraction but wells retained), and significant system modification (e.g. major reduction in extraction rates, closure of individual extraction wells within extraction network). The report should include the rationale for curtailment. Proposals for final closure should demonstrate that cleanup standards have been met, groundwater contaminant concentrations are stable, and contaminant migration potential is minimal.

7. **IMPLEMENTATION OF CURTAILMENT**

COMPLIANCE DATE: 90 days after Executive Officer approval

Submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in Task 6.

8. **EVALUATION OF NEW HEALTH CRITERIA**

COMPLIANCE DATE: 90 days after requested
by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved remedial action plan of revising one or more cleanup standards in response to revision of drinking water standards, maximum contaminant levels, or other health-based criteria.

9. **EVALUATION OF NEW TECHNICAL INFORMATION**

COMPLIANCE DATE: 90 days after requested
by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating new technical information which bears on the approved remedial action plan and cleanup standards for this site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be requested unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved remedial action plan or cleanup standards.

10. **Delayed Compliance:** If the dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the dischargers shall promptly notify the Executive Officer and the Board may consider revision to this Order.

D. **PROVISIONS**

1. **No Nuisance:** The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).
2. **Good O&M:** The dischargers shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.
3. **Cost Recovery:** The dischargers shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes

raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records:** In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:
 - a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b. Access to copy any records required to be kept under the requirements of this Order.
 - c. Inspection of any monitoring or remediation facilities installed in response to this Order.
 - d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the dischargers.
5. **Self-Monitoring Program:** The dischargers shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.
6. **Contractor / Consultant Qualifications:** All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.
7. **Lab Qualifications:** All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).
8. **Document Distribution:** Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:
 - a. City of Belmont Public Works Department
 - b. San Mateo County Environmental Health Services

The Executive Officer may modify this distribution list as needed.


9. **Reporting of Changed Owner or Operator:** The dischargers shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.
10. **Reporting of Hazardous Substance Release:** If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the dischargers shall report such discharge to the Regional Board by calling (510) 622-2300 during regular office hours (Monday through Friday, 8:00 to 5:00).

A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Secondarily-Responsible Discharger:** Within 60 days after being notified by the Executive Officer that other named dischargers have failed to comply with this order, W. Howard and Catherine Jones, as property owners, shall then be responsible for complying with this order. Task deadlines above will be automatically adjusted to add 60 days.
12. **Rescission of Existing Order:** This Order supercedes and rescinds Order No. 98-018 and Order No. 99-015.
13. **Periodic SCR Review:** The Board will review this Order periodically and may revise it when necessary.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 17, 2004.

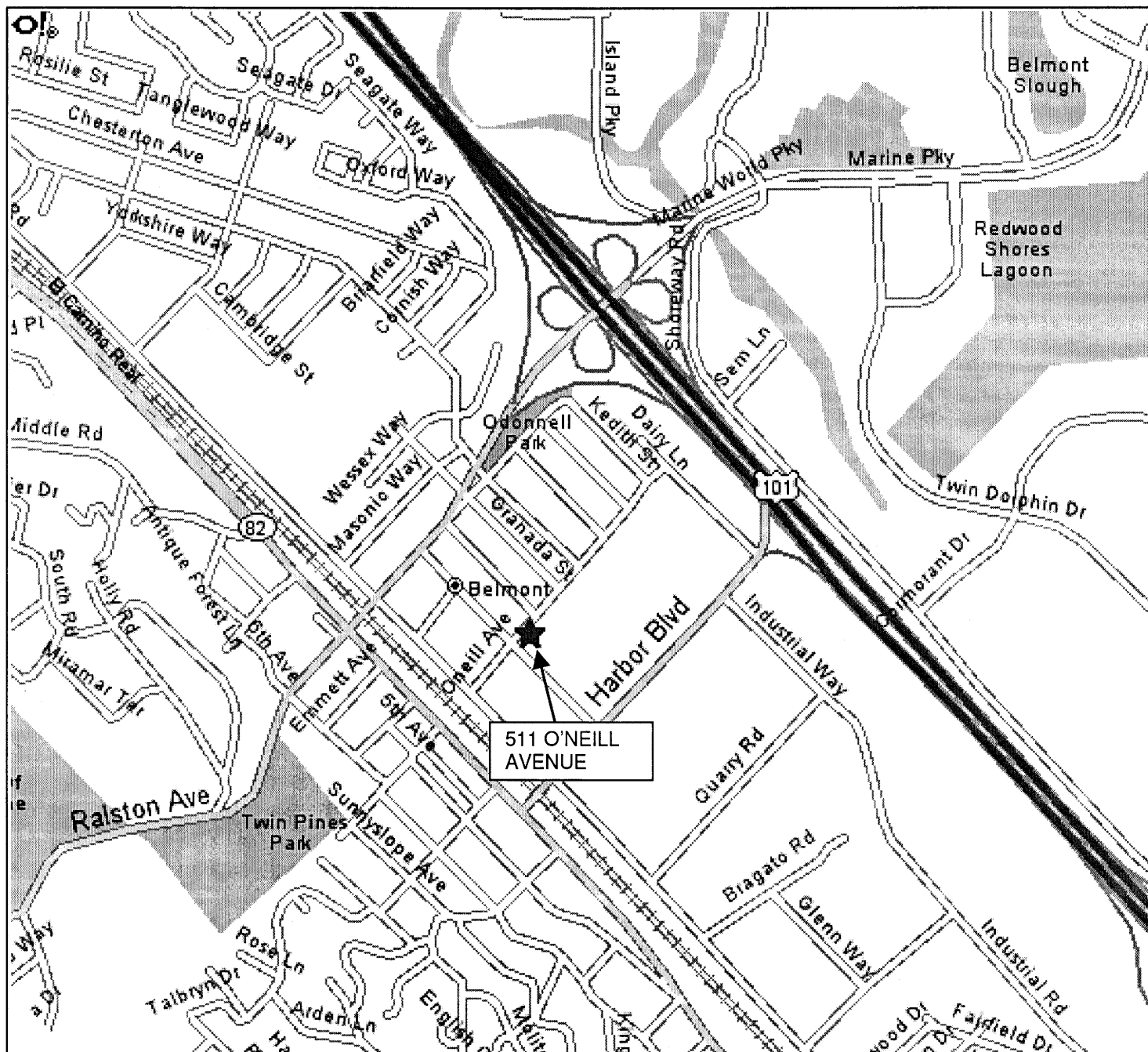

Bruce H. Wolfe
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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Attachments: Figure 1 - Site Location Map
Figure 2 - Site Area Designations
Self-Monitoring Program



Source: Yahoo! Maps. Not to Scale

FIGURE 1.
SITE LOCATION

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR:

PUREX INDUSTRIES, INC.;
BARON-BLAKESLEE, INC., A DELAWARE CORPORATION;
HONEYWELL INTERNATIONAL, INC.; AND
W. HOWARD AND CATHERINE JONES

for the property located at

511 O'NEILL AVENUE
BELMONT, SAN MATEO COUNTY

1. **Authority and Purpose:** The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. R2-2004-0015 (site cleanup requirements).
2. **Monitoring:** The dischargers shall measure groundwater elevations quarterly in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following table:

Well #	Frequency	Analyses	Well #	Frequency	Analyses
Source Area			Offsite Area		
511-MW-1	Semiannually	8260B*	MW-101	Semiannually	8260B
500-MW-5	Semiannually	8260B	MW-102	Semiannually	8260B
500-MW-6	Semiannually	8260B	MW-103	Semiannually	8260B
500-MW-7	Semiannually	8260B	MW-104	Semiannually	8260B
RMW1	Annually	8260B	MW-105	Semiannually	8260B
RMW2	Semiannually	8260B	MW-106	Semiannually	8260B
RMW3	Annually	8260B	MW-108	Semiannually	8260B
RMW4	Annually	8260B	MW-109	Semiannually	8260B
RMW5	Semiannually	8260B	MW-110	Semiannually	8260B
RMW6	Annually	8260B	MW-111	Semiannually	8260B
RMW7	Annually	8260B	MW-112	Semiannually	8260B
MW-107	Semiannually	8260B	MW-113	Semiannually	8260B

*Analyze for VOCs using EPA Method 8260B or equivalent

The dischargers shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The dischargers may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

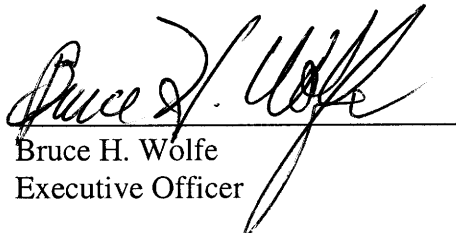
3. **Semiannual Monitoring Reports:** The dischargers shall submit semiannual monitoring reports to the Board no later than 30 days following the end of the reporting period (e.g. report for first half of the year due July 30). The first semiannual monitoring report shall be due on July 30, 2004. The reports shall include:

- a. **Transmittal Letter:** The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.
- b. **Groundwater Elevations:** Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the second semiannual report each year.
- c. **Groundwater Analyses:** Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the second semiannual report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).
- d. **Groundwater Extraction:** If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g. soil vapor extraction), expressed in units of chemical mass per day and mass for the reporting period. Historical mass removal results shall be included in the second semiannual report each year.
- e. **Status Report:** The semiannual status reports shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial

measures) and work planned for the following reporting period. Indoor air monitoring results shall be included in the reports on a semi-annual basis.

5. **Violation Reports:** If the dischargers violate requirements in the Site Cleanup Requirements, then the dischargers shall notify the Board office by telephone as soon as practicable once the dischargers have knowledge of the violation. Board staff may, depending on violation severity, require the dischargers to submit a separate technical report on the violation within five working days of telephone notification.
6. **Other Reports:** The dischargers shall notify the Board in writing prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.
7. **Record Keeping:** The dischargers or their agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Board upon request.
8. **SMP Revisions:** Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the dischargers. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Bruce H. Wolfe, Executive Officer, hereby certify that this Self-Monitoring Program was adopted by the Board on March 17, 2004.


Bruce H. Wolfe
Executive Officer